Blockchain and Wearables Integration: A New Approach for Supply Chain Management

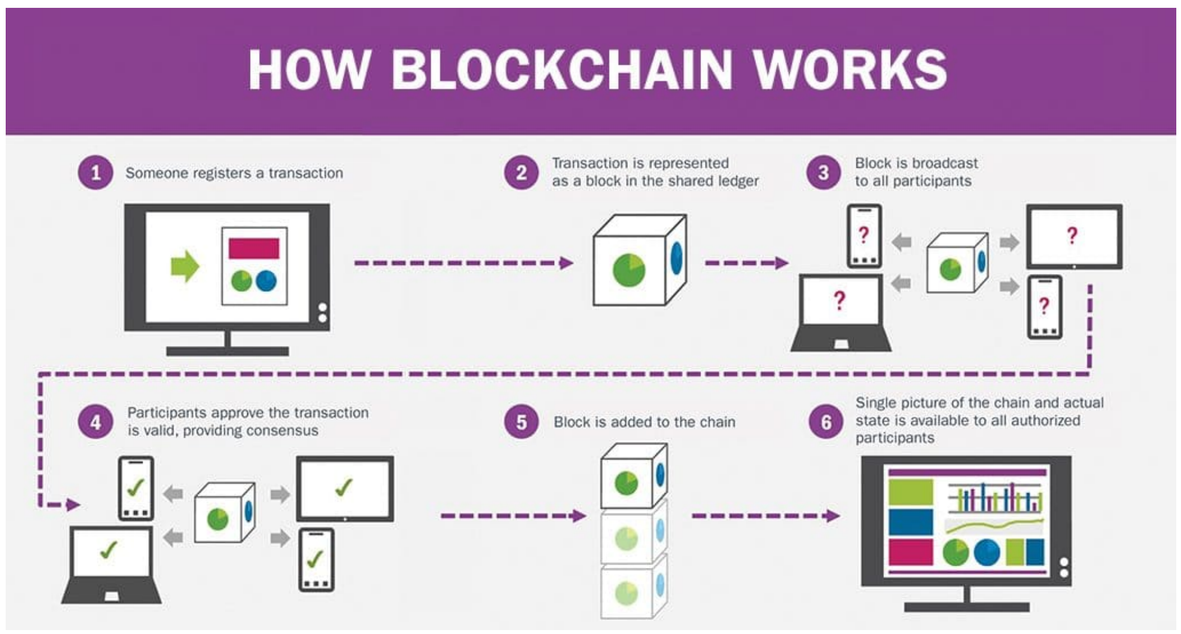
Burcu Dicle Yildiz, Hernan Sanchez, Raj Motla
Advisor: Dr. Nasir Sheikh
Department of Technology Management, School of Engineering
University of Bridgeport, Bridgeport, CT

ABSTRACT

Today, manufacturing companies are forced to find smart ways to increase efficiency and reduce costs in their supply chain because of the ever increasing competition. There are many players in a supply chain and managing vast amounts of transactions in the supply network is a tedious and costly activity. Visibility, trust, timeliness, quality, and traceability are all important aspects that need to be closely monitored and continuously improved. Innovative approaches to enable a seamless information flow throughout the chain is of great importance.

The newly emerging blockchain technology is a strong candidate in answering some of these challenges. MIB LLC is a technology company idea focused on blockchain technology applied to the manufacturing and logistics industry. Our goal as a start-up is to support companies in their supply chain management activities with our cutting-edge, secure, efficient blockchain system idea that can be implemented on any wearable device. We will create value for our customers by bringing visibility, speed, traceability and trust into their supply chains.

BLOCKCHAIN MECHANISM



Smart helmet, smart glass, smart glove integration

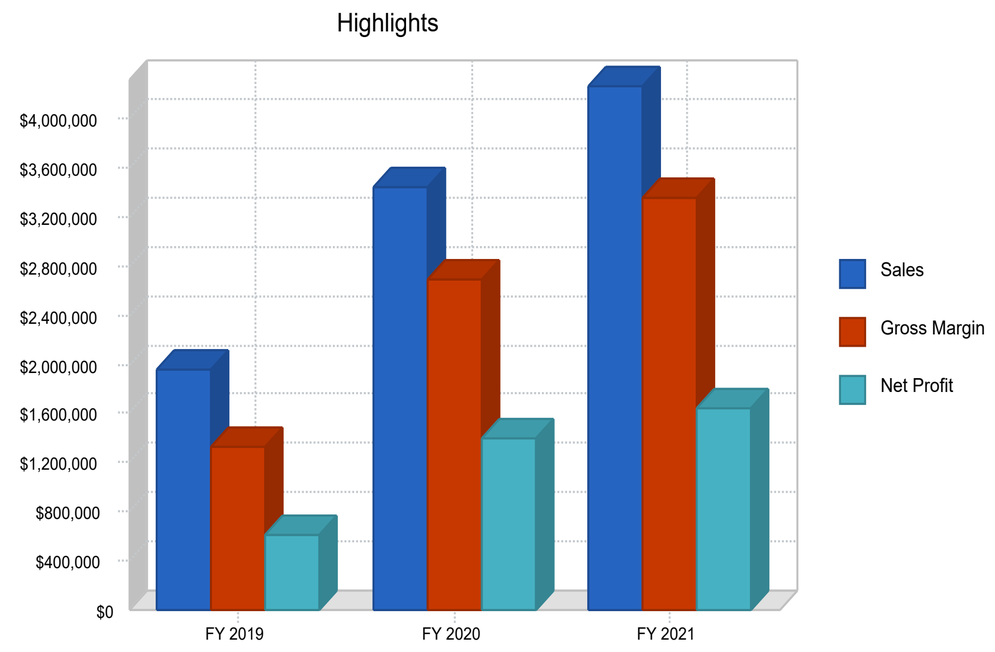
Blockchain technology is based on the idea of a distributed open ledger, which is validated and updated by every node of the network simultaneously when a transaction occurs. Every node has exactly the same ledger. Each transaction (block) has the same following information: the parties involved (sender-receiver), transaction details, and timestamp, which are all encrypted. The update of the data can only happen when all the nodes in the network reach a consensus. The data can neither be deleted nor tampered without the validation of all of the nodes. The new information is stored as a new block at the end of the chain with its own timestamp with date.

Wearable devices are the mobile tools that are carried on the body and collect and track data for the user concerning the process at hand. Increased ergonomics, speed, real-time data collection, and ease of use are the reasons for their exponential deployment in the industry.

START-UP REQUIREMENTS SUMMARY

Start-up	
Requirements	
Start-up Expenses	
Legal	$6,000
Stationery etc.	$2,500
Insurance	$1,500
Rent	$24,000
Computer	$25,000
Other	$5,000
Cloud Storage	$12,000
Blockchain Software Development	$140,000
Marketing	$48,000
Blockchain Consultant	$50,000
Total Start-up Expenses	$314,000
Start-up Assets	
Cash Required	$225,000
Start-up Inventory	$0
Other Current Assets	$10,000
Long-term Assets	$0
Total Assets	$235,000
Total Requirements	$549,000

FINANCIAL HIGHLIGHTS



CONCLUSIONS

Trust, visibility and traceability are among the most important and costly factors in supply chain management. The inherent characteristics of blockchain technology have the capability to support organizations on these factors.

The industrial wearables used in manufacturing and logistics companies create value in terms of speed, ergonomics, and efficiency. Integration of blockchain technology with wearables has the potential to boost the performance of a supply chain network by creating real-time, trusted, tamperproof data exchange between the network nodes.

The supply chain industry, wearables, and blockchain technology are all expected to grow immensely in the coming years, therefore we see significant profit potential in our start-up idea.

There are already some early adopters of blockchain technology in the market, such as Maersk and Walmart, and many other large companies are in the exploratory stages. Future work should focus on the speed of data transfer and increasing efficiency on handling high number of transactions as the network grows.

REFERENCES

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